1.0 SCOPE

1.1 Identification

This Software Users Manual (SUM), developed in accordance with Section 2.0, Reference *a*, applies to the Reference File Administration (RFA) application. This document describes the Joint Operation Planning and Execution System (JOPES) RFA, Version 1.4. This document covers all reference files that have been migrated to the Global Command and Control System (GCCS).

RFA is an application of JOPES, operating within the GCCS environment. RFA is used in a centralized location by database analysts to accept Joint Reporting Structure (JRS) input transactions and update reference files. These reference files are then distributed to JOPES Core database servers within GCCS.

RFA operates in a client/server environment. The RFA software resides on a UNIX application client or server, while its data resides in an ORACLE Relational Database Management System (RDBMS) on a database server. RFA software uses ORACLE Forms 4.0 as the Graphical User Interface (GUI) and ORACLE Reports 2.0 as the report generator. RFA also uses a variety of Commercial-Off-The-Shelf (COTS) product. UNIX shell scripts and ORACLE Structured Query Language (SQL) are used where required.

1.2 System Overview

The RFA application is used by database analysts at the Defense Information Systems Agency (DISA)/Joint Interoperability and Engineering Organization (JIEO)/JEXI to process reference file updates, which originate from Services and agencies within the Department of Defense (DOD). The RFA application verifies the accuracy of input transactions submitted in accordance with the JRS, prepares transactions that update the JOPES Core database, and provides updates to legacy software in some cases.

The RFA application is a menu-driven subsystem that assists database analysts in the reference file maintenance process. The RFA application provides an online update to the Specified Geographical Location File (GEO), and batch updates to the Type Unit Characteristics File (TUCHA), the Type Unit Equipment Detail File (TUDET), the Port Characteristics File (PORTS), the Aerial Ports and Air Operating Bases File (APORTS), and the Logistic Factors File (LFF). After updates have been processed for a particular reference file, the network process of the RFA application reduces transactions to a single change (at most) for each database record. An ORACLE script to update reference file tables at all JOPES Core database sites is produced. A series of reports can be produced to show rejected transactions, processed transactions, and reference file status.

The major functions of RFA are as follows (see Paragraph 3.1):

1. Make Working Copy,
2. Online Update,
3. Batch Update,
4. Network, and
5. Reports.

1.3 Document Overview

This document provides the user with instructions for operating the RFA application. Contents of the RFA SUM are as follows:

Section 1: Identifies, describes, and gives the purpose of the RFA application.

Section 2: Lists references applicable to this document.

Section 3: Discusses RFA software applications, software inventory, software environment, operation of software, emergency procedures, software security considerations, and procedures for software problem resolution.

Section 4: Contains step-by-step procedures for operation of software by first time users. It covers detailed discussions of equipment the software is using, system access (passwords and security), software installation and setup, initiating work sessions, and how to cease or interrupt software use.

Section 5: Provides the user with procedures for using the RFA software. It describes interrelationships of transactions, menus, functions, and processes of the system. It covers background processing, data backup procedures, and detailed procedures for restart or recovery during processing emergencies.

Section 6: Provides a list of acronyms, which are used in this document or are useful to the user in understanding RFA.

Appendix A: Lists error messages that may be produced by the RFA application.

Appendix B: Displays report examples described in Section 5.0.

2.0 REFERENCED DOCUMENTS

The following documents are applicable or referenced in this SUM:

a. Software Development and Documentation (MIL-STD-498), Data Item Description (DID) DI-IPSC-81443, Software Users Manual (SUM), December 5, 1994.

b. Joint Operation Planning and Execution System (JOPES) Development and Integration Maintenance Manual: Scheduling and Movement (S&M) GCCS Core Database Maintenance Manual, August 25, 1994.

c. Joint Operation Planning and Execution System (JOPES) Migration Strategy (Draft), Version 1.0, August 8, 1994.

d. Migration Engineering Strategy Guide Near-Term Migration Strategy, August 31, 1994.

e. DEIS/JIEO/JEXI, Software User's Manual: JOPES Users Guide (Final), June 30, 1995.

f. Computer Sciences Corporation (CSC), Systems Engineering Division (SED), GCCS JOPES Migration Engineering and Implementation, Software Development Plan (SDP), Falls Church, VA, June 15, 1995.

g. CSC, SED, Joint Operation Planning and Execution System (JOPES) Joint Operation Planning System (JOPS) Database Specification, Falls Church, VA, August 16, 1994.

h. CSC, SED, JOPES Software Development Standards, Falls Church, VA, July 25, 1995.

I. DISA, GCCS Implementation Procedures for the Global Command and Control System (GCCS) (Draft), Version 2.0, Washington, D.C., March 9, 1995.

j. DISA, GCCS Style Guide (Draft), Washington, D.C.

k. DISA, Global Command and Control System (GCCS) Integration Standard, Version 1.0, Washington, D.C., October 26, 1994.

l. ORACLE Corporation, ORACLE Forms Reference Manual, Part Number A11988-2, Redwood Shores, CA, February 1994.

m. ORACLE Corporation, ORACLE Forms User's Guide, Part Number A11987-2, Redwood Shores, CA, February 1994.

n. ORACLE Corporation, ORACLE Reports Reference Manual, Part Number A14005-1, Redwood Shores, CA, 1993.

o. ORACLE Corporation, Building Reports with ORACLE Reports, Part Number A14004-2, Redwood Shores, CA, 1993.

p. Koch and Muller, Osborne McGraw-Hill, ORACLE7, The Complete Reference, Berkeley, CA, 1993.

q. Quercia and O'Reilly, O'Reilly & Associates, Inc., The Definitive Guides to the X-Window System, X-Window System User's Guide, 1993.

r. Anderson and Anderson, PTR Prentice Hall, The UNIX C Shell Field Guide, Englewood Cliffs, NJ.

s. CSC, SED, JOPES Development Standards, Falls Church, VA, July 25, 1995.

t. DEIS/JIEO/JEXI, Software Programmer's Manual: RFA Maintenance Documentation, Falls Church, VA, August 28, 1995.

u. Joint Chiefs of Staff, JRS, Joint Reports, JOPS, Type Unit Equipment Detail Report (TEDREP), Joint Pub 1-03.16, Chapter 2 (formerly JCS Pub 6, Vol II, Part 11, Chapter 2).

v. Joint Chiefs of Staff, JRS, Joint Reports, JOPS, Aerial Ports and Air Operating Bases Report (APORTSREP), Joint Pub 1-03.16, Chapter 5 (formerly JCS Pub 6, Vol II, Part 11, Chapter 5).

w. Joint Chiefs of Staff, JRS, Joint Reports, JOPS, Port Characteristics Report (PORTSTREP), Joint Pub 1-03.16, Chapter 6 (formerly JCS Pub 6, Vol II, Part 11, Chapter 6).

x. Joint Chiefs of Staff, JRS, Joint Reports, JOPS, Logistic Factors Report (LOGFACREP), Joint Pub 1-03.16, Chapter 8 (formerly JCS Pub 6, Vol II, Part 11, Chapter 8).

y. Joint Chiefs of Staff, JRS, Joint Reports, JOPS, Type Unit Characteristics Report (TUCHAREP), Joint Pub 1-03.16, Chapter 9 (formerly JCS Pub 6, Vol II, Part 11, Chapter 9).

z. Joint Chiefs of Staff, JRS, Joint Reports, General Use/Miscellaneous, Specified Geolocation Code Request (GEOREQ), Joint Pub 1-03.19 (formerly JCS Pub 6, Vol II, Part 14, Chapter 1).

3.0 SOFTWARE SUMMARY

This section provides an overview of the RFA software, data inputs, basic functionality, list of capabilities, and output.

3.1 Software Application

The RFA application is the migration of the COBOL Reference File Maintenance (RFM) subsystem of Joint Operation Planning System (JOPS) to a SUN UNIX client/server environment. The RFA application is designed in ORACLE Forms and ORACLE Reports against an ORACLE database. Transaction files in JRS format must be present in a subdirectory of the users home directory. When the RFA user makes changes to reference files, changes are made against local files, not the "live" reference files being used by other GCCS users. As changes are made, the RFA software captures all changes by use of ORACLE database triggers. These "before" and "after" images are reported to the user to verify changes made. When the RFA user is satisfied with the changes and wants to distribute the changes throughout the GCCS, the RFA application consolidates all changes to the smallest set and generates the differences between the local reference file and the "live" reference file. These differences are described in an ORACLE SQL update file that can be executed on each JOPES Core database server to update the reference file. This update file is passed to the JOPES distribution software.

The five major functions of the RFA application are described as follows:

1. **Make Working Copy**. Allows the user to produce a starting position for a specified reference file by copying the contents of that reference file from an operational database server. Updates to reference files are made to this "working copy." To execute this function, the user must be an RFA Database Administrator (DBA), a DBA of the given reference file, or have COPY access to the specified reference file.

2. **Online Update**. Allows the user to add, change, or delete any GEO record. To execute this function, the user must be a DBA or have UPDATE access to the specified reference file. This function is available for GEO, TUCHA, and Access Control Files. The GEO Online Update function also allows the user to invoke the GEO Auto Delete function to delete GEO records that have been canceled. The TUCHA Online Update allows the user to invoke the TUCHA Auto Delete function to delete TUCHA records that have been canceled. The Access Control File Online Update function allows RFA Administrators to use discretionary access controls to restrict the users who can execute various RFA functions.

   A user identified as an RFA DBA can perform any RFA function for any reference file. When the RFA application is initially installed, the User Identification (USERID) "*rfaadmin*" is identified as an RFA DBA. A user identified as a DBA for an individual reference file can perform all RFA functions just for that particular reference file. Users who do not qualify as a DBA must have individual access to a specific reference file. The access types are COPY, UPDATE, NETWORK, and REPORTS.

3. **Batch Update**. Allows JRS transactions, which are available in UNIX American Standard Code for Information Interchange (ASCII) files, to be validated, and updates the working copy. The Batch Update process is available for TUCHA, TUDET, PORTS, APORTS, and LFF. Reports are available to show JRS format errors, reference file transaction data errors, transaction lists, and successful updates. Session reports show a before and after image of each database record updated. To execute this function, the user must be a DBA, or have UPDATE access to the specified reference file.

4. **Network**. Examines all updates to a given reference file over many sessions and reduces these updates to a single update (at most) per database record. Cycle reports show a before and after image for each updated database record. If the user concurs, a SQL script is generated that updates the contents of the specified reference file on all JOPES Core database servers. For GEO, TUCHA, and TUDET, the Network function generates transactions in JRS format that can be exported from GCCS to a legacy Worldwide Military Command and Control System (WWMCCS) Top Secret Support System (TS3) mainframe to process reference file updates within the WWMCCS/TS3 network.

5. **Reports**. Allows the user to produce several reports. The Reference File Summary Report provides status information an all reference files. Session and Cycle Reports are available for a specified reference file. Reference files with batch update capability have Input Transaction Listings, JRS Edit/Error Reports, and Input Transaction Error Listings. GEO, TUCHA, and TUDET also have specific file content listings.

3.1.1 Benefits

The RFA application operates directly off the JOPES Core database; thus, it is connected to all systems using this database. Presently, there are other systems within GCCS sharing this relational database in the client/server environment. These systems are: Joint Flow and Analysis System for Transportation (JFAST), Logistics Sustainment Analysis and Feasibility Estimator (LOGSAFE), Requirements Development and Analysis (RDA), Scheduling and Movement (S&M), Reports, Transportation Component Command (TCC) External Systems Interfaces (ESI), Ad Hoc Query (AHQ), Joint Engineer Planning and Execution System (JEPES), Medical Planning and Execution System (MEPES), GCCS Status of Resources and Training System (GSORTS) and its associated GSORTS database, Information Resource Management (IRM), Force Module Editor (FMEDIT), Information Management System (IMS), Nonunit Personnel Planning (NPG), Reports, and Force Augmentation Planning and Execution System (FAPES). Figure 3.1.1-1 illustrates the architecture of the JOPES applications and databases. It shows which applications, including teleconferencing (TLCF), are accessible from the JOPES System Level Navigation (JNAV) window, and illustrates that data can be distributed to other JOPES sites.

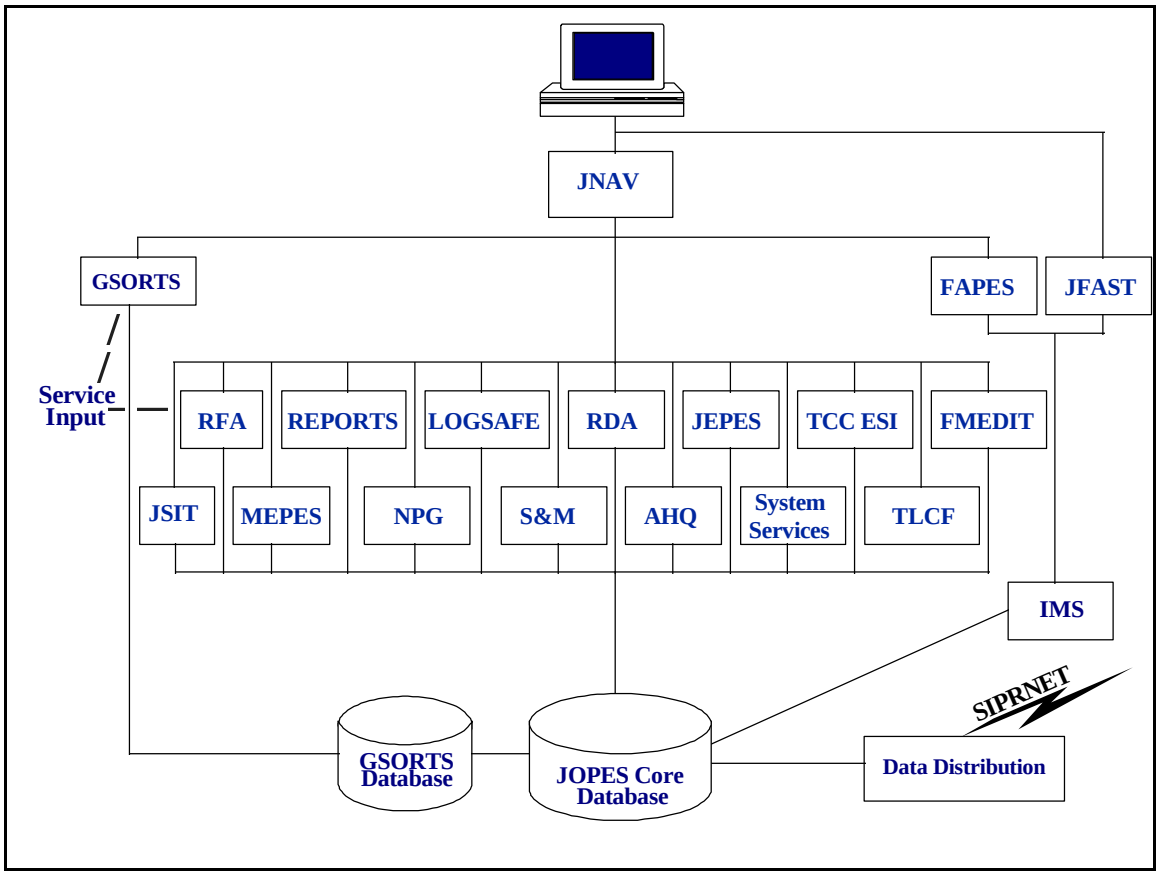

Figure 3.1.1-1. JOPES Applications and Databases

3.1.2 Improvements

RFA was migrated from the WWMCCS Honeywell mainframe where many of the steps were manual. The GCCS implementation of RFA is much more user friendly than the legacy system. The client/server nature of GCCS will distribute processing requirements over several hardware components, reducing the possibility of performance degradation due to heavy workload on any given hardware component. Using a standard relational database, ORACLE, improves maintainability because many database functions are part of the ORACLE core and do not need coding in the application.

3.2 Software Inventory

The following are the names and version numbers of COTS products used to develop the RFA application:

- ORACLE RDBMS Server 7, Release 7.1.4.1.0 with distributed option,
- ORACLE PL/SQL, Release 2.1.4.0.0,
- ORACLE Forms, Release 4.0.13.20,
- ORACLE Reports, Release 2.0.14.6.2,
- ORACLE SQL*Loader, Release 7.1.4.1.0,
- ORACLE SQL*Plus, Release 3.1.3.5.1,

- SQL*Net, Version 2.0.15.0.0,
- JOPES Core database [S&M database (SMDB) Segment], and
- Solaris 2.3/2.4.

3.2.1 Directories

The RFA application requires the following directories:

Directory Name	Description
/h/RFA	RFA client directory contains the sourced environment file, *rfaenv*
/h/RFA/progs	Contains the UNIX script to launch RFA, *RFA_launch*
/h/RFA/rfa_home	Contains the ORACLE Forms and Reports object files, UNIX scripts, and ORACLE SQL scripts.

About 80 megabytes (MB) of space is required for the RFA client segment.

3.2.2 ORACLE Database

RFA has a local ORACLE database with the schema name *rfa*. RFA also extracts data from the JOPES Core database, *table_master*, and the Airfields database, *airfield_adm*.

3.3 Software Environment

RFA processes the changes to reference files to the local database. Once the user is satisfied with the contents of a local reference file, the Network function is used to generate an ORACLE SQL script to update live reference files at each JOPES Core database server. For GEO, TUCHA, and TUDET the Network function also generates transactions in JRS format for export to the WWMCCS/TS3.

3.4 Software Organization and Overview of the Operation

The RFA system is based on standard windows that contain a title bar (located at the top of the window), a window menu (located under the title bar), and window control push buttons, with the major portion of the window devoted to the applications or functions performed by the user. The title bar contains the name of a specific RFA operation and is used as a reference to any operation description, for example, the discussion of a malfunction.

Pull down menus are available from the menu bars displayed on the windows. These menus consist of a menu title and sets of actions available to the user. Windows contain a variety of "push buttons," which execute commands in the system, activated by the user. To execute a command, place the mouse pointer over the button of choice, and click the mouse select button.

3.4.1 Supervisory Controls

RFA contains an Access Control System to limit the capabilities of certain users. For each reference file, individual capabilities include COPY, to copy a working copy from the live JOPES Core database; UPDATE, to update the working copy; NETWORK, to generate a SQL script of changes made; and REPORTS, to generate various window and printer reports. Individuals can be given DBA capability for a given reference file, allowing that individual all capabilities for that reference file. A RFA DBA capability is available for a user to have all capabilities for all reference files. A discussion of the use of the Access Control System is presented in Paragraph 5.3.8.

3.4.2 Logical Components

Detailed discussions of the logical components are in Section 5.0. An overview is provided in Paragraph 3.1.

3.4.3 Relationships

Inputs to RFA consist of transactions submitted from the Services and agencies in accordance with the JRS. Reports and reference file data from the RFA application are sent to a number of DOD organizations. Updates to reference files accomplished by the RFA application are collected and passed to a GCCS data distribution system, which updates the reference files at each JOPES Core database within the GCCS network.

3.5 Contingencies and Alternative States and Modes of Operation

There are no special alternative states or modes of operation for RFA.

3.6 Security and Privacy

RFA programs are unclassified; however, JOPES data may be classified up to SECRET. Classification of data shown on any report are generated by the system and determined by the highest classification of the reference file. This classification is set under GCCS software.

3.7 Assistance and Reporting of Problems

If a user encounters an anomaly during the use of any JOPES product contained within GCCS, a Global System Problem Report (GSPR) should be issued through the DISA Network Operation Center (NOC) at (703) 735-8681. An information copy should be provided to the DISA Chief, Configuration Management (CM) Point of Contact (POC) at (703) 735-8764.

3.7.1 Problem Reporting

The initial PR should include the following minimal information:

a. Originator Name,
b. Organization,
c. Phone #,
d. Fax #,
e. E-Mail Address,
f. Severity of Problem, and
g. Description of Problem.

3.7.2 Problem Report Resolution

When a GSPR is received, a GSPR number is assigned and a software engineer investigates the nature of the GSPR and attempts to recreate it. Additional information is requested from the reporting user as required.

The system engineer recreates the GSPR, validates the priority with the user, and forwards all pertinent documentation to the Configuration Control Board (CCB) for evaluation, prioritization, scheduling, and integration of the fix into future releases. If the GSPR priority is sufficiently high, an emergency patch is provided to the Joint Planning and Execution Community (JPEC) along with pertinent release notes. If a GSPR is to be incorporated into a subsequent release, electronic information is disseminated or made available to the JPEC describing the specific problem, system used, potential impact on collateral systems, and projected date of fix.

3.7.3 PR Electronic Bulletin Board

JOPES GSPRs are posted on an electronic bulletin board as soon as possible to provide pertinent information immediately to all JOPES GCCS users.

3.7.4 Future Enhancement

Any suggestions or recommendations for changes to improve the RFA application should be presented to the site Functional Manager who initiates Engineering Change Proposals (ECPs) for changes suggested.

4.0 SOFTWARE ACCESS

4.1 First Time Users

The RFA application provides the capability to query, add, delete, modify, and edit data for reference files within the JOPES Core database. In addition, the subsystem can be used to produce a variety of reports from the information contained in the RFA database and in the JOPES Core database. Detailed instructions on how to perform these functions and generate reports is contained in Section 5.0

4.1.1 Equipment Familiarization

The RFA application executes on the standard GCCS hardware platform. Procedures for powering up and down a GCCS workstation are found in the GCCS User's Manual.

The RFA application uses the Message Oriented Text Interchange Format (Motif) user interface conventions. The cursor is positioned using a mouse, and a selection executed by clicking on the mouse. The cursor appears as a darkened arrow pointing towards the upper left corner of the window.

The RFA application assigns functions only to the left button (or activated mouse select button) on a two-button mouse. For a standard two button mouse, the left button is referred to as the "mouse select" button.

Option items are selected from buttons located on windows and menus. Button options are selected by clicking on a specific button. Note: Button options may also have an underlined letter. The **[ALT]** + <underlined letter> keyboard combination may be pressed in lieu of clicking on the button.

To access HELP information, click **{Help}** or press **[F1]**.

4.1.2 Access Control

Initial access to the RFA application is provided by the site Functional Database Manager (FDBM). The FDBM adds the USERID code and provides ORACLE privileges to run RFA.

4.1.3 User Installation and Setup

Once the FDBM has added the USERID as a valid RFA user, the GCCS desktop allows the user to access the RFA application. Access is provided through an *RFA* icon and through the JNAV application.

4.1.4 Internal Access Control

The RFA DBA grants certain RFA capabilities to the user (See Paragraph 5.3.8).

4.2 Initiating a Session

To initiate an RFA session, the user must first log on to GCCS. When the GCCS Desktop window appears, the user clicks the *JOPES* icon and the JNAV window, shown in Figure 4.2-1, displays. To initiate an RFA session, the user then clicks **{START}**, located to the left of the "Reference File Administration (RFA)" label.

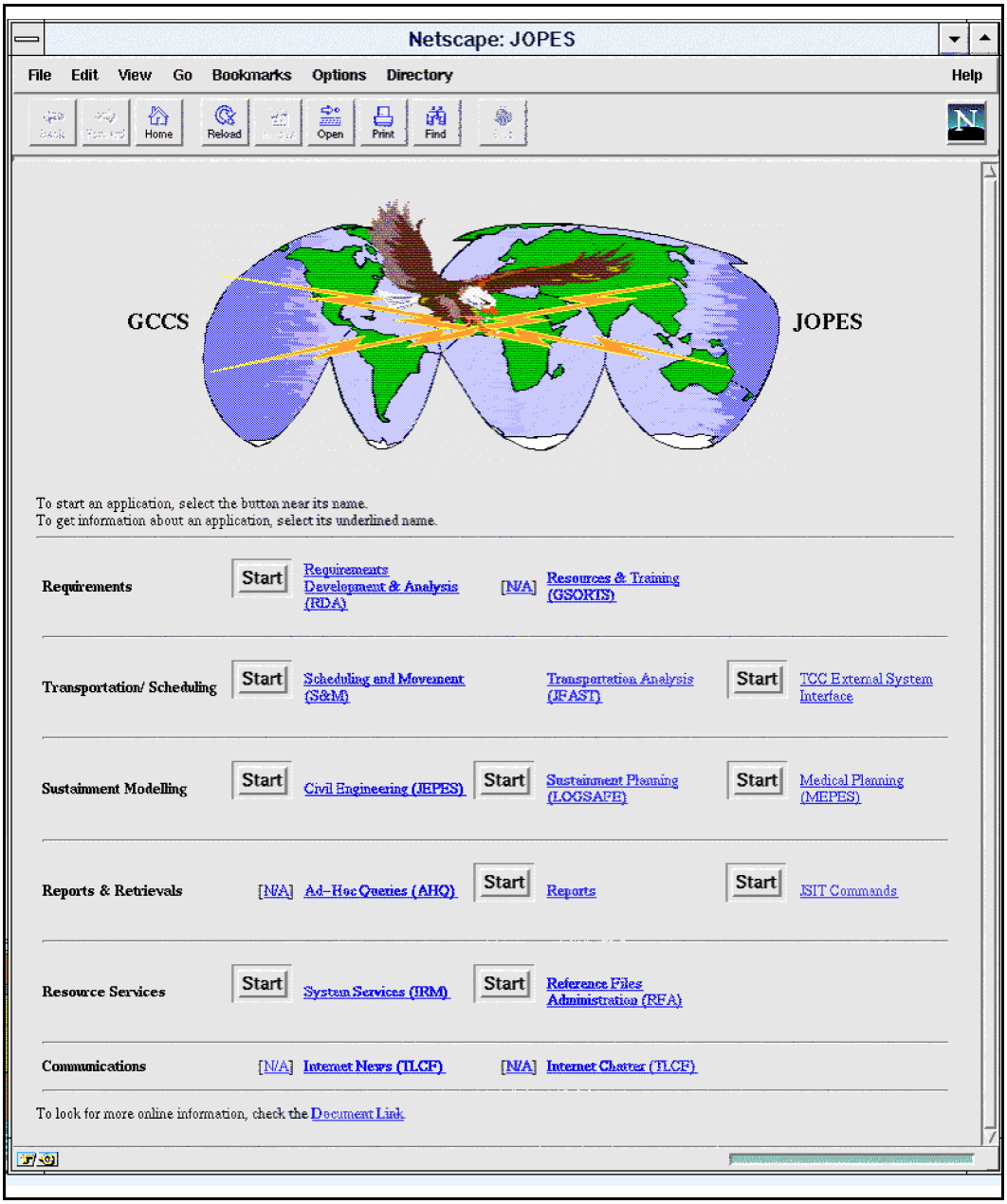

Figure 4.2-1. JOPES System Level Navigation Window

Clicking **{START}**, displays the RFA logo window, as shown in Figure 4.2-2. If the user clicks **{Cancel}**, RFA terminates. If the user clicks **{OK}**, the RFA main menu (RFA - Select File) window appears as shown in Figure 4.2-3.

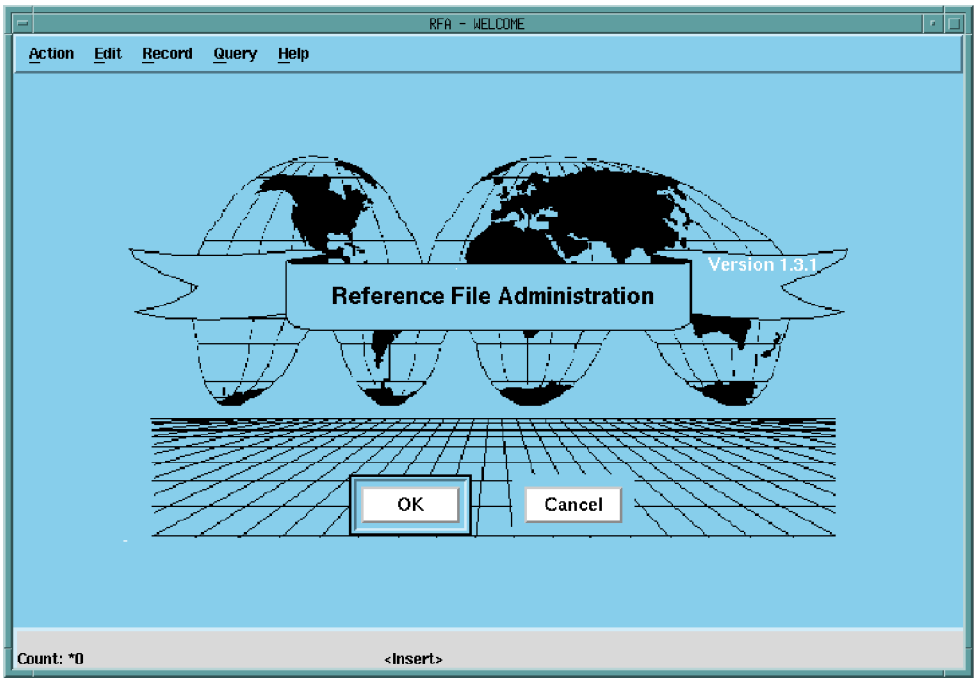

Figure 4.2-2. RFA Logo Window

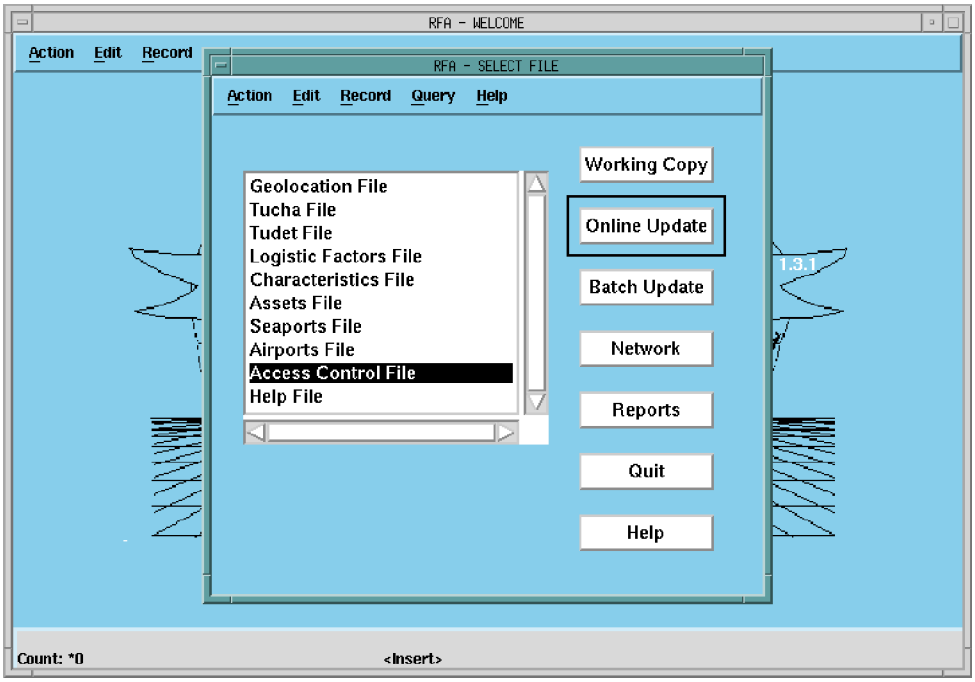

Figure 4.2-3. RFA Main Menu Window

If the user receives a database login prompt following the display of the RFA logo window, the RFA application is not properly configured for execution. Contact the site FDBM to check the configuration of the RFA application if this occurs.

4.3 Stopping/Suspending Work

To exit the RFA application, click **{QUIT}**, on the RFA - Select File menu. This initiates the termination of the RFA application. If any changes were made to a reference file, a summary of changes is displayed, and the user may view or print the session report.

If an application error occurs and the user is unable to continue, the user can exit the RFA application by pulling down the Action menu from the current window and clicking **{Exit}.**

If GCCS suffers a catastrophic failure (such as a disk crash or power failure), the current RFA user session terminates. The last process may not have finished; therefore, the user should repeat the last process.

5.0 PROCESSING REFERENCE GUIDE

This section provides the user with detailed information about the RFA application for the various functions shown in the following paragraphs. This information includes samples of windows and menus to visually aid the user in performing necessary steps to access the system, required and optional inputs, and other instructions to operate the system. Figures shown indicate the menu structure within particular functions. Paragraphs 5.6, 5.7, and 5.8 provide additional help to the user for system problems and error reports/warnings encountered.

5.1 Capabilities

See Section 3.0.

5.2 Conventions

Conventions discussed below include not only those used in the RFA application, but also those used in this document.

5.2.1 Application Buttons

Application buttons on windows are rectangular and distributed at various places depending on what the user is viewing. Another type of button used, sometimes called a "radio" button, has no words on it. Words next to it usually indicate that the user may choose or not choose a condition. A depressed display of the button indicates it is on. Both type buttons are clicked on by using the mouse select button (normally the left button). The radio button stays in the changed position. The application button depresses for an instant when clicked on and returns to its original position. These latter buttons are all labeled with short action words, clearly denoting to the user what should occur if used. The common action words are as follows:

{Cancel} Closes a window without updating the database.

{Exit} Closes all primary and secondary windows in the RFA application and ends processing by the RFA application.

{Help} Displays online information about an item or general information about a window. Help is available through the mouse menu button or through the **[F1]** key. It is sensitive to specific windows.

{OK} Updates the database and closes the window.

{Print} Initiates a process for printing a report.

{View} Initiates a process for displaying a report on the screen.

5.2.2 Document Conventions

The following are typographic conventions used throughout this guide.

Format	Description Represented
Bold	**Bold** characters are **required characters** that the user must enter exactly as they appear. For example: Type: **1%-2%**
Italics	*Italics* are used to identify "place holders" for information the user must enter. For example, if the user is directed to type information that is to be determined by the user, the description of this variable input is in *italic* type. Example 1: Type *filename* Example 2: Type **cp test.txt** *filename* The above statement directs the user to type in the characters "cp test.txt" followed by a new file name that the user provides.
[ ]	Brackets surround names of keyboard keys pressed by the user. Names of keyboard keys are always **bold** and in all caps. For example: Press **[ENTER]**.
{ }	Braces surround names of buttons that are clicked with the mouse. In text, the button name is in **bold** as it appears on the window, usually in initial capital letters or in all capitals. For example: Double click **{Add to FM}** with the mouse select button. Click **{OK}**
< >	Greater than and less than symbols surround hypertext, if applicable.
ALL CAPS	Acronyms; or the name of keys on the keyboard. For example: Press **[ENTER]**.
Initial Caps	Titles, menu names, and window buttons appear as shown on the window. Most cases are in initial capital letters.
Figures	Figure numbers are identified by paragraph number. The figure itself follows the first reference to it.
Popup	This refers to windows or menus that "pop up" after being invoked by clicking a button selection on the window. For example, click **{CANCEL}** to remove the popup menu.